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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,629	01/18/2000	Iain Clive Andrew Franklin Robinson	3265/85705	9911

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EXAMINER	
WOITACH, JOSEPH T	
ART UNIT	**PAPER NUMBER**
1632	

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/484,629	ROBINSON ET AL.	
	Examiner	Art Unit	
	Joseph T. Woitach	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-16,28,31,33,34 and 36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-16, 28 and 31, 33, 34 and 36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This application is an original application filed January 18, 2000, which claims benefit to foreign applications: PCT/GB99/02658, filed December 8, 1998; 9817566.4, filed August 12 1998; and 9910522.3, filed May 6, 1999, all filed in the United Kingdom.

As noted in prior office action mailed December 11, 2003, the specification has been amended. Claims 8-10, 16, 28, and 31-34 were amended. Claims 30, 32 and 35 were cancelled. Claim 36 was added.

Applicants' amendment filed January 11, 2004, has been received and entered. The specification has been amended. Claims 8-16, 28 and 31, 33-36 are pending.

Election/Restriction

Newly submitted claim 36 is directed to Applicants elected invention. Applicants have elected group II, drawn to a nucleic acid encoding a 5'OT-EST polypeptide, a vector containing said nucleic acid and a cell containing said vector (see paper number 11 and 15).

As indicated in the previous office action, claim 35 is directed to a method of using a 5'OT-EST for determining mutations, polymorphisms or other changes. Claim 35 has been withdrawn from consideration as being directed to a non-elected invention (see 37 CFR 1.142(b) and MPEP § 821.03).

Claims 8-16, 28 and 31, 33, 34 and 36 are currently under examination.

Sequence compliance

The objection to the specification because the application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2), and specifically, Figure 6 contains multiple sequences which are not identified in the figure of the short description of the figure is withdrawn.

The amendments to the specification have obviated the basis of the rejection.

Claim Objections

Claim 32 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim is withdrawn.

Cancellation of claim 32 has rendered the rejection moot.

Claim Rejections - 35 U.S.C. § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 28 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention is withdrawn.

The amendment to claim 28 to recite "5 to 150" which is supported by the instant specification has obviated the basis of the rejection.

Newly added claim 36 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. 37 CFR 1.118 (a) states that "No amendment shall introduce new matter into the disclosure of an application after the filing date of the application". In the instant case, a nucleic acid probe 'of 10 to 50 nucleotides in length' is considered new matter. Applicants have not specifically pointed to the portion of the specification for support of this amendment. Upon review of the specification literal support for this amendment can not be found. Support for a probe which is preferably 5 to 150 nucleotides is found on page 15, second to last paragraph. On page 16, last full paragraph support for a fragment that is 'between 15 and 50 bases in length" is found. Additionally, the literal support in the specification is not specifically associated with a probe to detect mutations or polymorphisms which predispose an individual to obesity, rather it is only associated with sequences which are related to fragments which encode a polypeptide. The only size fragment literally supported by the specification is 'about 20 bases in length" for use in PCR reactions (page 16, last paragraph).

To the extent that the claimed compositions and/or methods are not described in the instant disclosure, claim 36 is also rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, since a disclosure cannot teach one to make or use something that has not been described.

MPEP 2163.06 notes "If new matter is added to the claims, the examiner should reject the claims under 35 U.S.C. 112, first paragraph - written description requirement. *In re Rasmussen*, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981)." MPEP 2163.02 teaches that "Whenever the issue arises, the fundamental factual inquiry is whether a claim defines an invention that is clearly conveyed to those skilled in the art at the time the application was filed...If a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, involving a departure from, addition to, or deletion from the disclosure of the application as filed, the examiner should conclude that the claimed subject matter is not described in that application. MPEP 2163.06 further notes "When an amendment is filed in reply to an objection or rejection based on 35 U.S.C. 112, first paragraph, a study of the entire application is often necessary to determine whether or not "new matter" is involved. Applicant should therefore specifically point out the support for any amendments made to the disclosure".

Claims 8-16, 28, 31, 33 and 34 stand rejected and newly added claim 36 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants note the amendments to the claims, in particular clause (b) indicates sequence that hybridize and have a defined function (pages 9-10). Further, Applicants note that the specification provides details for "stringent hybridization" (bottom of page 10). With regard to the limitation that an amino acid sequence "modulates the obesity of an animal" Applicants cite the Examiners comments on the results of the J17 and J45 lines presented in the instant

specification and argue that this interpretation is not correct (page 11). Contrasting the phenotype of other models where GH expression has been characterized, Applicants argue that there is a clear correlation with the 5'OT-EST sequence. (bottom of page 11 to page 12). Given the description of the structural/functional limitations requiring hybridization and the correlation with the ability to modulate obesity in an animal Applicants argue that claims as amended are supported by adequate written description (page 12). See Applicants' amendment, pages 9–12. Applicants' arguments have been fully considered, but not found persuasive.

The amendments to the claims are noted, in particular that the sequences encompassed by the claims now include any sequence that hybridizes to SEQ ID NOs: 1, 3, 5 or 7 and encodes a protein that has the ability to modulate obesity in an animal. Initially, Examiner does not dispute the results presented in the present specification and acknowledges that the expression of 5'OT-EST sequence is associated with obesity, and that the phenotype is different from that associated with the expression of GH. The basis of the instant rejection focuses on the breadth of the sequences encompassed by the claims. More specifically, the claims encompass (as set forth in clause (b)) any sequence that will hybridize to SEQ ID NOs: 1, 3, 5 or 7 as it is related to structure and of that structural limitation only the sequences associated with obesity in an animal as it is related to function. The issue is the failure of the specification to describe adequately of which sequences are identified that hybridize, which will meet the functionally limitations required by the claims. It is noted that adequate written description requires more than a mere statement that it is part of the invention. See *Fiers v. Revel*, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016 (Fed. Cir. 1991). In the instant case, the specification is silent with respect to any critical characteristic of a sequence

which would be considered a 5'OT-EST. Further, beyond the specific SEQ ID NOs defined to be a 5'OT-EST sequence, the specification is silent with respect to what would be considered a mutation or a polymorphism of these specific sequences. Moreover, the specification fails to provide a clear nexus between the SEQ ID NOs and there consequence on any assayable phenotype of a cell or transgenic animal wherein the artisan could even test any variation of the SEQ ID NO. Again, it is not disputed that the full length cDNA sequences identified in mouse, human and rat are associated with obesity, however the breadth of the claims is very large encompassing any sort of variant including mutants, truncations, entire gene sequences and any polymorphic sequence that would hybridize under a given set of conditions. The specification does not disclose all these possible embodiments, and even if the structural limitation could be adequately defined by hybridization (see rejection under 35 USC 112, second paragraph), importantly among all these embodied sequences there is no guidance to which would meet the functional limitations of the claims. The specification is silent with respect to any mutation or polymorphism which is associated with obesity. For example, claims 33 and 34 recite a specific short sequences however these sequences alone are not capable of modulating obesity, even though they may meet the functional limitation of the claims. More simply put given any linear polynucleotide or amino acid sequence the specification fails to provide the necessary guidance to determine whether that particular sequence is functional, and given the uncertainty of the hybridization conditions whether it even meets the structural limitations as well.

Adequate written description requires more than a mere statement that it is part of the invention. See *Fiers v. Revel*, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016 (Fed. Cir. 1991). In the instant case, the

specification is silent with respect to any critical characteristic of a sequence which would be considered a 5'OT-EST. Further, beyond the specific SEQ ID NOs defined to be a 5'OT-EST sequence from three different species of mammal, the specification is silent with respect to what would be considered a mutation or a polymorphism of these specific sequences. Finally, the specification fails to provide a clear nexus between the SEQ ID NOs and there consequence on any assayable phenotype of a cell or transgenic animal wherein the artisan could even test any variation of the SEQ ID NO. *Vas-Cath Inc. v. Mahurkar*, 19USPQ2d 1111 (Fed. Cir. 1991), clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." *Vas-Cath Inc. v. Mahurkar*, 19USPQ2d at 1117. The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed."*Vas-Cath Inc. v. Mahurkar*, 19USPQ2d at 1116. Possession may be shown by actual reduction to practice, clear depiction of the invention in a detailed drawing, or by describing the invention with sufficient relevant identifying characteristics (as it relates to the claimed invention as a whole) such that a person skilled in the art would recognize that the inventor had possession of the claimed invention. *Pfaff v. Wells Electronics, Inc.*, 48 USPQ2d 1641, 1646 (1998). In the instant case, the specification fails to provide any specific or identifying features of a 5'OT-EST beyond the specific sequences set forth as SEQ ID NOs. Accordingly, naming a type of material generally known to exist, in the absence of knowledge as to what that material consists of, is not a description of that material. Since the specification is silent with respect to any relevant identifying characteristic of a 5'OT-EST (neither for the polynucleotide nor the polypeptide sequences) the specification

fails to provide any nexus between structure and function of a 5'OT-EST which the artisan could use to determine if a sequence with any given structural limitation would be considered a 5' OT-EST.

Possession may be shown by clear depiction of the invention in a detailed drawing, or by describing the invention with sufficient relevant identifying characteristics such that a person skilled in the art would recognize that the inventor had possession of the claimed invention. Because the specification fails to provide any identifying characteristics of the 5'OT-EST sequence its fails to provide an adequate description demonstrating that Applicants were in possession of the invention as broadly claimed. Therefore, for the reasons above and of record, the rejection is maintained.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-16, 28, 31, 33, 34 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Initially, claims 8, 9, 10, 16 and 28 rejected for being are vague and indefinite in the recitation of 'at least 90% homologous... as determined by BLAST analysis using default parameter' is withdrawn. The amendment to the claims to delete this embodiment has obviated the basis of the rejection. With respect to claims 9 and 28, it is noted that the new sequence listing provides nucleic acid sequences for SEQ ID NOs: 5, 7, 16 and 17 and therefore, the rejection is withdrawn.

Claims 8-16, 28, 31, 33, 34 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claims 8-10, 16 and 28 have been amended to recite nucleic acid sequences "that hybridize under stringent hybridization conditions". The specification provides only a reference to conditions considered to be stringent (page 16, second paragraph) and teach that a variety of modifications can be made and are contemplated for hybridization and the conditions must be determined empirically based on the probe use (page 16, fifth paragraph). The metes and bounds of the claims are indefinite because conditions considered stringent are not clearly set forth. As taught by the specification multiple conditions exist, and 'optimal conditions' must be determined empirically, thus what one would consider "stringent" would vary from one individual to another. Dependent claims merely set forth that the sequences are in a vector or transformed into a cell. Claims 33, 34 and 36 set forth structural limitations of the sequences (specific sequences and a specific range of length), however this fails to further define the conditions in which these limitations would be detected or more specifically define the hybridization conditions encompassed by the claims.

Conclusion

No claim is allowed.

The claims are free of the art of record because the art fails to teach or make obvious the specific SEQ ID NOs or sequences that hybridize and have a specific activity as encompassed by

the present claims. It is noted that GenBank sequence entries: AA955566, AA421393, AA505752, AA421310, AA2422211, AA245389, AA104183, AA850004, H31115, or H31114 (previously applied) would likely hybridize, however because the sequences are EST sequences they represent truncated proteins that would not modulate obesity in an animal.

The TO and AVP genomic sequences have been previously described, however these cloned sequences did not contain the 5' polynucleotide sequence which comprised the 5'OT EST gene described in the instant specification. Further, the prior art teaches that ESTs sharing partial homology to the 5'OT EST sequences were known, however the art failed to teach the full length sequences as presently disclosed, and failed to appreciate the presence of the 5'OT EST gene 13 kb upstream of the TO gene, or provide motivation to link this gene or gene product described only by the partial EST sequences with the TO gene. The OT sequences described are demonstrated to be in physical linkage to Ptpra, AVp and Oxt and provide physical markers of these genes on chromosome 2 (specification-page 9).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Woitach whose telephone number is (571) 272-0739.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Reynolds, can be reached at (571) 272-0734.

Any inquiry of a general nature or relating to the status of this application should be directed to Rene Jones at 571-272-0547.

Joseph T. Woitach

/Joe Woitach/
AU1632